

ARB TECHNICAL SYSTEMS AUDIT

Summer 2007

BACKGROUND

In July, 2007, Region 9 conducted a TSA of the California Air Resources Board (ARB). The purpose of this briefing is to present the major findings of the audit and discuss recommendations and next steps.

The ARB is the Primary Quality Assurance Organization (PQAO) responsible for ensuring that the air pollutant data collected by the ARB and 20 local Districts meet EPA QA requirements. A PQAO is a monitoring organization that is responsible for a set of stations for which data quality assessments can be pooled. The only other PQAOs in California are San Diego APCD, Bay Area AQMD, and South Coast AQMD. Each criteria pollutant sampler/monitor at a monitoring station in the SLAMS and SPM networks must be associated with one, and only one, primary quality assurance organization.

The Regions are required to conduct Technical Systems Audits (TSAs) of all PQAOs every three years. According to our records, this is the first TSA of the ARB conducted by the Region. However we understand that TSAs were performed routinely by EPA Headquarters in the 1980's.

This TSA reviewed numerous aspects of the ARB and its PQAO districts' monitoring program, including network management, field operations, laboratory operations, data management, and quality assurance. In addition to the ARB we evaluated the air monitoring programs of three of the 20 districts in the PQAO, San Joaquin Valley APCD, Great Basin Unified APCD and Northern Sierra AQMD.

MOST SIGNIFICANT FINDINGS

- The ARB QA program does not meet most of EPA QA requirements regarding Primary Quality Assurance Organizations. This is a basic requirement of 40 CFR, Part 58, Appendix A.
- The ARB conducts monitoring using Federal grant dollars without adequate QA procedures in place.
- The ARB does not ensure that Districts under its QA oversight are implementing consistent QA controls for the collection and submittal of data to EPA.

RAMIFICATIONS

Validity of Data

Generally, criteria pollutant instrument operators perform the required QC and maintenance checks and ARB conducts performance audits so the data being collected are valid (for the most part). However, the overall QA program is not consistent when comparing District to District or District to the ARB. This is particularly evident in the area of data review and verification, which occurs prior to official certification of data for EPA NAAQS determinations.

Consistency of Data

EPA currently pools all of the data from the ARB and its PQA districts under the assumption that they all collect data in a consistent manner. Our findings have shown that the data are not being collected consistently. Unless the ARB ensures that all 20 District's operations are consistent with their own we should not be pooling this data.

Local District QA programs

Some local Districts have QA programs in place, but with the exception of Great Basin Unified APCD, none has a program that would meet our requirements. An example is the SJVAPCD monitoring program. While the District refers to some of the ARB's SOPs in its operations, for the most part they operate according to their own SOPs (where available) and QA/QC procedures. The SJVAPCD's QA activities are not sufficient to support a monitoring program apart from the QA program of the ARB.

Defensibility of Data

Looking back, the lack of QA oversight by the ARB and EPA makes defensibility of the data, if challenged, that much more difficult. Looking forward, because the QA procedures implemented by the ARB and Districts are not adequately documented and are not consistent from agency to agency, the likelihood increases that we might have to invalidate large chunks of data if a problem in the system occurs and is not corrected quickly.

Grant Obligations

Federal regulations require that entities that accept federal grant dollars must have approved QA plans/programs in place.

Resource Impacts

Without adequate State oversight, EPA region 9 will have to take a much more hands on role with local district monitoring program. We currently have 11 official PQAOs to oversee (ARB, South Coast, Bay Area, San Diego, ADEQ, Maricopa, Pima,

Hawaii, NDEP, Washoe and Clark) and numerous tribes for which the extent of our oversight responsibility is unclear. We currently do not have the resources required to assume oversight of the 20 local districts in the ARB PQAO.

OPTIONS

The following are initial options for us to consider:

Main Issue: Criteria Pollutant Monitoring

If the ARB accepts our findings and wants to retain the current PQAO structure they will need to take a much more active role in District monitoring programs. Making sure that all agencies are using the SOPs for instrument operations and data handling would be the first step. Instituting an internal audit program, similar to our TSA, would allow the ARB to ensure that Districts are performing consistently with respect to the ARB program.

However, there are some Districts that, given the option, would prefer being their own PQAO. Great Basin Unified APCD is the most obvious example. They run a very impressive and independent program and could easily become their own PQAO. Any restructuring of the ARB PQAO would entail a review of how 105 grant dollars in California are allocated. It would also require that the ARB have administrative control of the data produced by the 20 Districts.

Regardless of how we come to resolution, EPA region 9 is going to have to take a much more active role in assisting ARB in meeting our requirements, if they allow us.

Secondary Issue: Special Projects

Special projects involve the ARB's support of special monitoring studies (e.g. children's health study, Lake Tahoe study, Fresno Super Site). The issue for this area is using federal dollars without approved QA plans and the lack of a clearly identified party responsible for QA.

The QA branch of the ARB Monitoring and Laboratory Division made it clear during our audit that they have limited QA role in monitoring projects initiated by other ARB Divisions. They have argued that these projects do not use Federal funds so are not subject to our QA requirements. Our review of ARB grants shows that we do support monitoring activities for special projects.

Resolution of this issue will involve more communication between the EPA grants, monitoring, and QA offices and sending a clear message to the ARB during the grant application process that QA plans need to be submitted and approved. These plans should make it clear which entity in the ARB is responsible for special project QA activities.

ARB SLAMS CRITERIA POLLUTANT MONITORING NETWORK

Agency	Ozone Monitors	CO Monitors	NO2 Monitors	SO2 Monitors	PM2.5 Monitors	PM10 Monitors
Antelope Valley APCD		1	1		1	1
ARB	25	6	14	1	17	22
Great Basin Unified APCD					1	11
Imperial County APCD	2	1			2	5
Kern County APCD					1	1
Lake County AQMD	1				1	1
Mendocino County APCD	2	2	2		1	3
Mojave Desert AQMD	6	2	3	2	1	4
Monterey Bay Unified APCD	6	1	2		2	5
North Coast Unified AQMD					2	2
Northern Sierra AQMD	2				4	2
Northern Sonoma County APCD	1					3
Placer County APCD	2					
Sacramento Metropolitan AQMD	4	3	4	2	2	5
San Joaquin Valley Unified APCD	11	5	10		5	8
San Luis Obispo County APCD	5		3	1	1	4
Santa Barbara County APCD	4	2	3	3		2
Shasta County AQMD	2				1	2
Siskiyou County APCD					1	
Tehama County APCD						1
Ventura County APCD	6		2		4	3
Yolo-Solano AQMD	2				1	
TOTAL	81	23	44	9	48	85
ARB	25	6	14	1	17	23
District (21)*	56 (15)	17 (8)	37 (9)	8 (4)	31 (17)	63 (20)

*Number in Parentheses indicates number of Districts operating that type of instrument

ARB CRITERIA POLLUTANT SPECIAL PURPOSE MONITORING NETWORK

Agency	Ozone Monitors	CO Monitors	NO2 Monitors	SO2 Monitors	PM2.5 Monitors	PM10 Monitors
Antelope Valley APCD	1					
ARB	7					2
Great Basin Unified APCD						1
Imperial County APCD	3		1			
Mojave Desert AQMD						1
Monterey Bay Unified APCD	2	1	1	1	1	2
North Coast Unified AQMD	1	1	1	1		1
Sacramento Metropolitan AQMD	2	1	1			
San Luis Obispo County APCD						1
Santa Barbara County APCD	4	2	4	2		2
Siskiyou County APCD	1					2
Tehama County APCD	1					
Yolo-Solano AQMD						3
TOTAL	22	5	8	4	1	15
ARB	7	0	0	0	0	2
District (21)*	15 (8)	5 (4)	8 (5)	4 (3)	1 (1)	13 (8)

*Number in Parentheses indicates number of Districts operating that type of instrument